NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interface

JLOTS R&D SYMPOSIUM VI
29 - 31 January 2001

Jason Chang
NSWC Carderock
(301)227-1400

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interface

- Current Issues
- Objective
- Benefits
- Project Plan
- Status
- Questions

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interface

Ship ramps designed for calm water pier operations, not for dynamic motions.

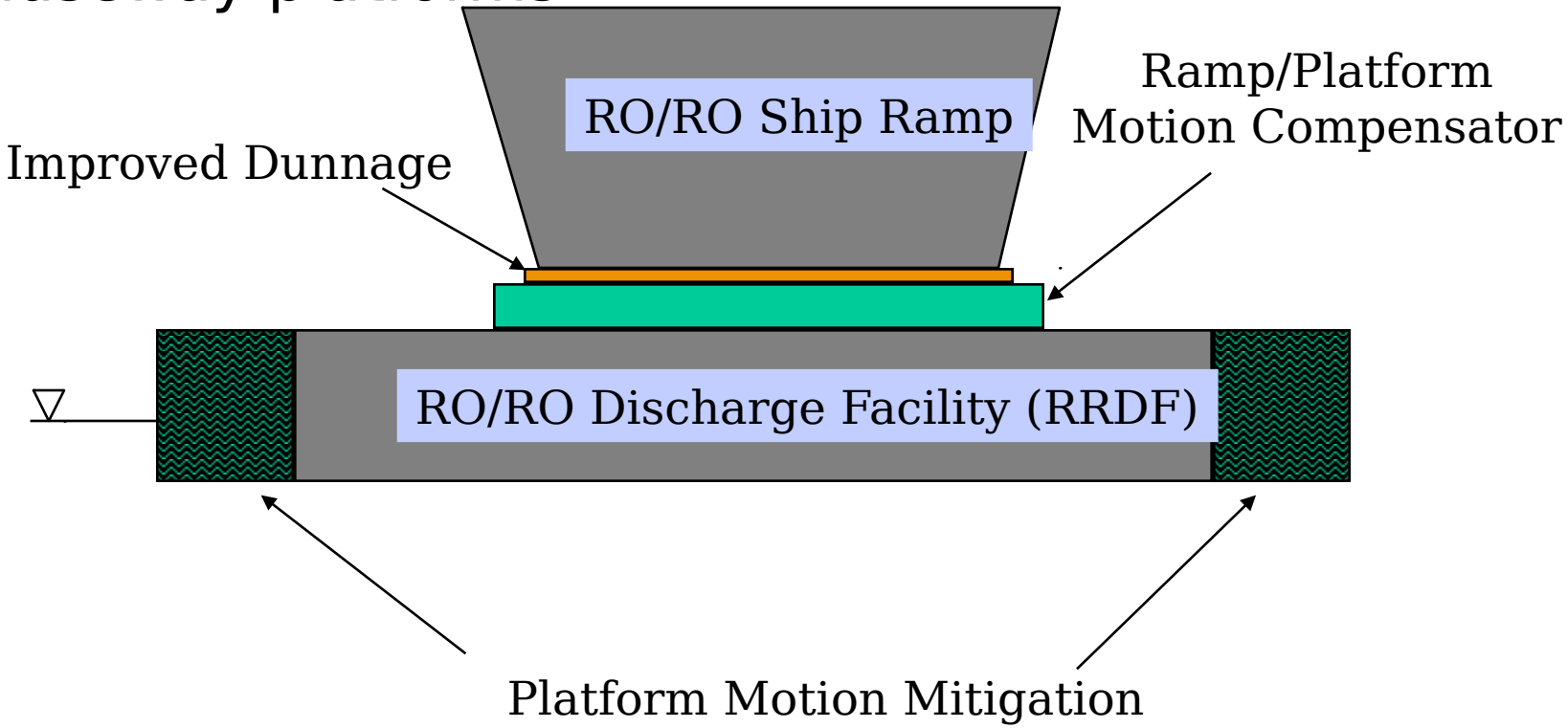
Existing and planned modular platforms provide no motion mitigation to reduce ramp and platform relative motion.

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interface

Objective

Develop a SS3 interface capability between ramps of existing RO/RO ships and existing and future causeway platforms



NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interf

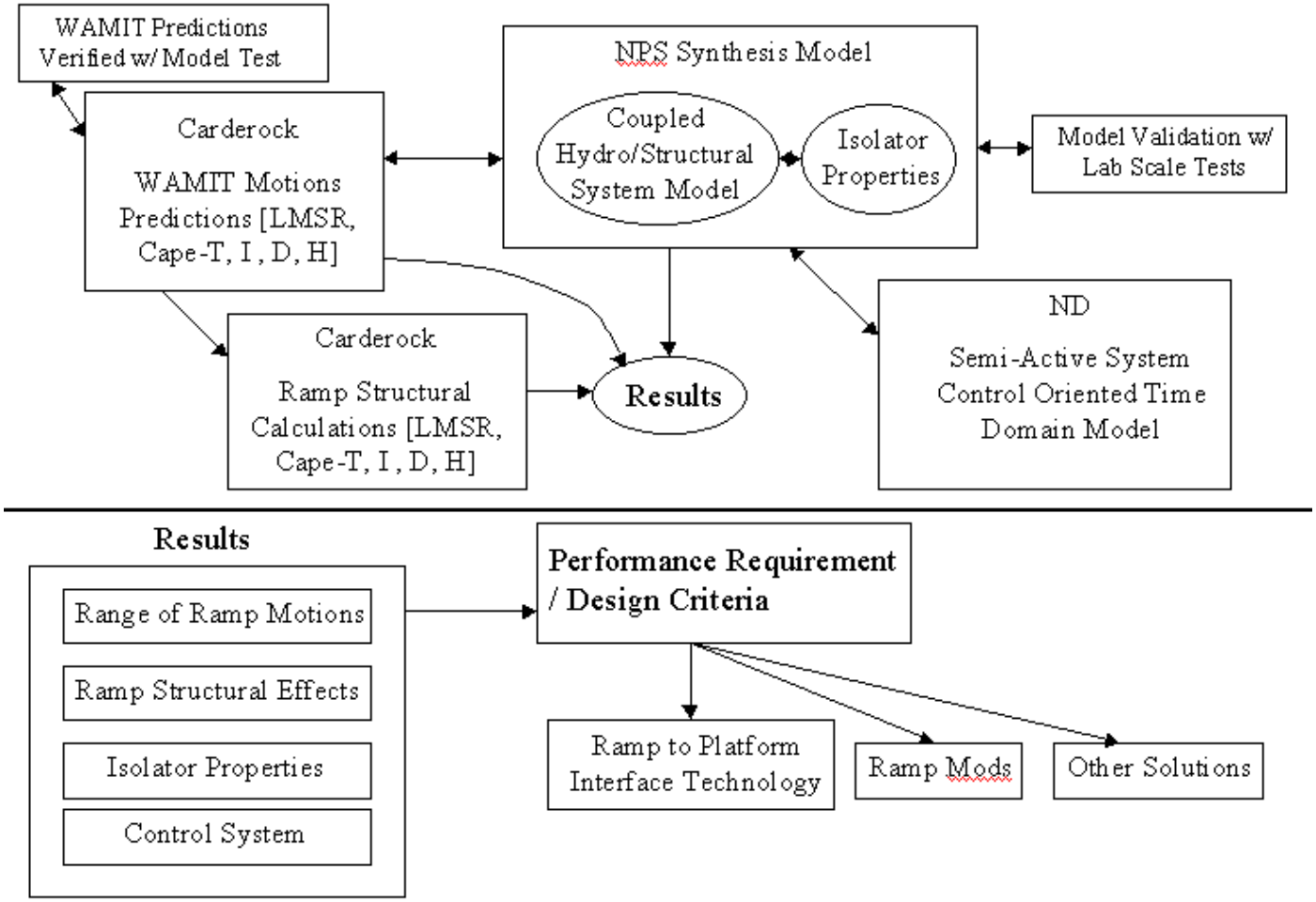
Benefits

- Increase RO/RO operations window through Sea State 3
  (3.5 to 5 ft. significant wave height)
  Increased operational time results in better productivity
- Avoid costly RO/RO ship ramp modifications
  Single RO/RO ramp modifications costs $ $$$
- Enable operations with MPF, RRF, Commercial and foreign
  RO/RO vessels

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interf

Project Plan



NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interf

Status

- BAA re-issued on 18 January 2001
- NPS hydrodynamic/structural model complete (frequency domain)
- Development of time-domain model underway
- Scale model construction underway - validation of computer model

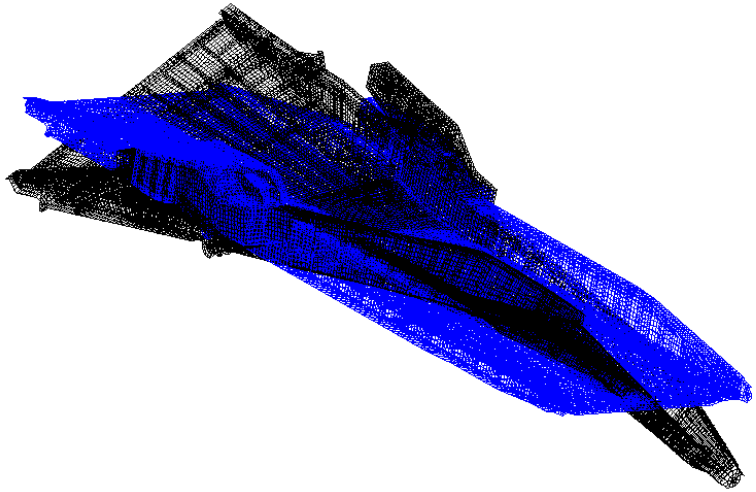
  to commence when model is completed.

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

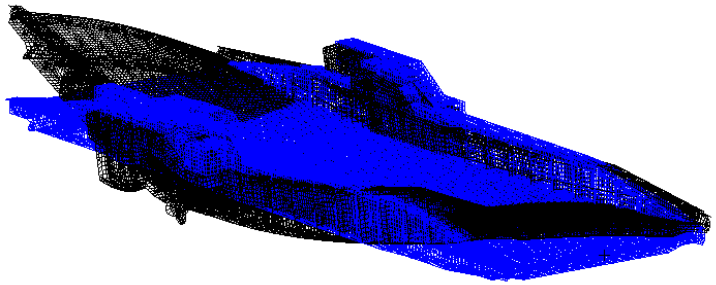
RO/RO Ramp to Platform Interface

Primary structural issues of RO/RO ramp in SS3

Cape T Stern Ramp



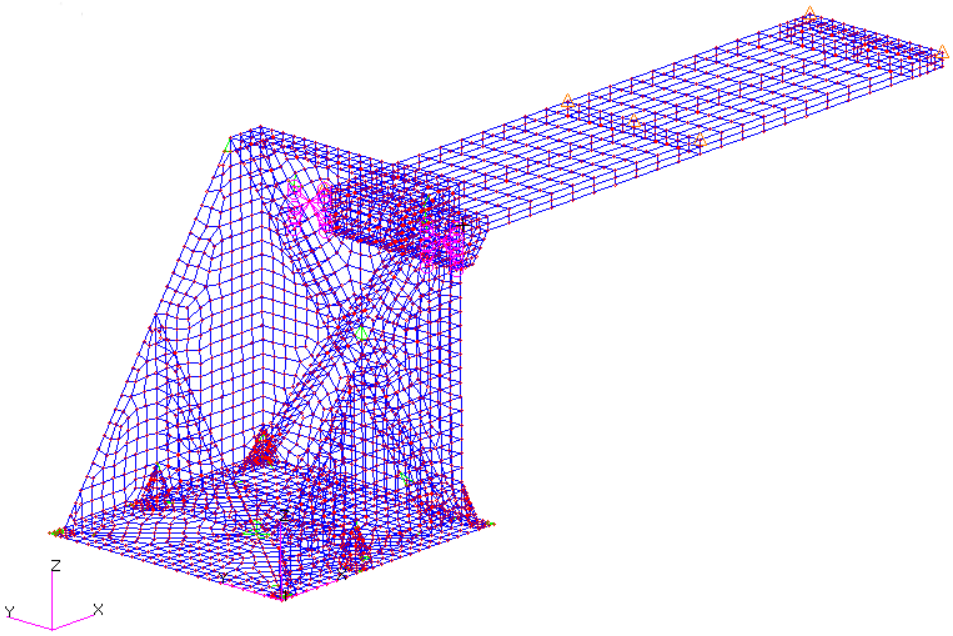
Mode 1: Torsion



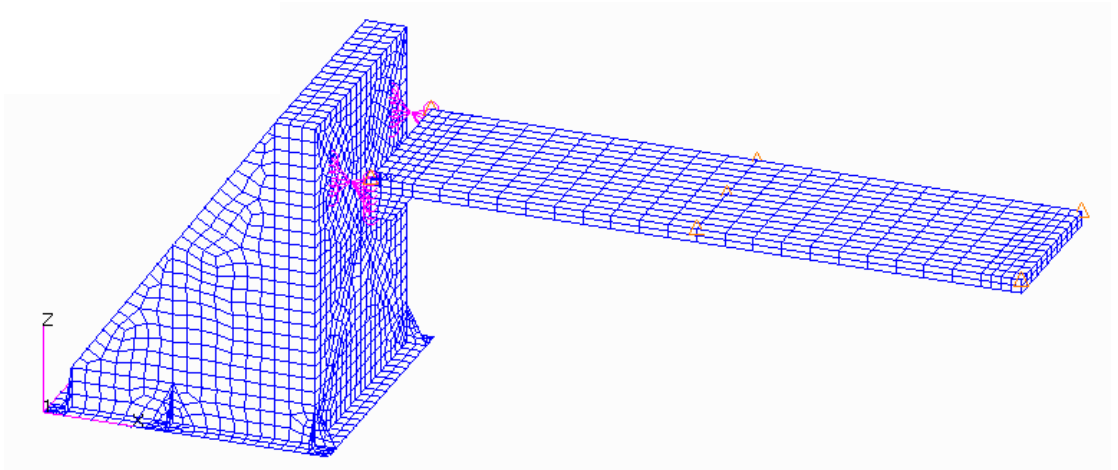
Mode 2: Bending

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interf



FEM of NPS scale model



NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interf

FY 01

- Evaluate contractor proposals responding to BAA
- Use NPS simulation to identify best concept
- Contract award, proceed with detailed design/initial procurement

FY 02

- Continue concept development/ prototype construction
- Full scale test and report

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interf

Information and updates can be obtained at:

http://www.dt.navy.mil/code282/rororamp.html

NAVSEA
NAVAL SEA SYSTEMS COMMAND
Carderock Division

RO/RO Ramp to Platform Interf

?